

Today's Date: 5/23/2001

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| USPT,JPAB,EPAB,DWPI | (\$absorbent polymers) same gel\$ same (transition metal) | 2 | <u>L9</u> |
| USPT,JPAB,EPAB,DWPI | 17 and alcohol\$ | 124 | <u>L8</u> |
| USPT,JPAB,EPAB,DWPI | 16 and gel\$ and polymer\$ and (transition metal or cobalt) | 141 | <u>L7</u> |
| USPT,JPAB,EPAB,DWPI | (aminobutyric acid) or (aminocaproic acid) | 4751 | <u>L6</u> |
| USPT,JPAB,EPAB,DWPI | (acryl\$ aminobutyric acid) or (acryl\$ aminocaproic acid) | 0 | <u>L5</u> |
| USPT,JPAB,EPAB,DWPI | (acryloyl aminobutyric acid) or (acryloyl aminocaproic acid) | 0 | <u>L4</u> |
| USPT,JPAB,EPAB,DWPI | acrylamido methylpropane sulfonic acid | 40 | <u>L3</u> |
| USPT,JPAB,EPAB,DWPI | (gel\$ same polymer\$ same solvent)and (AMPS and transition metal) | 57 | <u>L2</u> |
| USPT,JPAB,EPAB,DWPI | (gel\$ same alcohol)and (AMPS same transition metal) | 0 | <u>L1</u> |

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| SUBABSORBENT.DWPI,EPAB,JPAB,USPT. | 3 |
| FORMEDABSORBENT.DWPI,EPAB,JPAB,USPT. | 1 |
| DRY-FORMEDABSORBENT.DWPI,EPAB,JPAB,USPT. | 1 |
| FLUIDABSORBENT.DWPI,EPAB,JPAB,USPT. | 1 |
| LIQUIDABSORBENT.DWPI,EPAB,JPAB,USPT. | 7 |
| SOUNDABSORBENT.DWPI,EPAB,JPAB,USPT. | 4 |
| DEABSORBENT.DWPI,EPAB,JPAB,USPT. | 1 |
| | |
| GELS(GELATIN/M2).USPT,JPAB,EPAB,DWPI. | pickup term |
| (((\$ABSORBENT POLYMERS) SAME GELS SAME (TRANSITION METAL)).USPT,JPAB,EPAB,DWPI. | 2 |

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(\$absorbent polymers) same gel\$ same
(transition metal)

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L3: Entry 26 of 40

File: USPT

Sep 10, 1985

DOCUMENT-IDENTIFIER: US 4540510 A

TITLE: Synergistic thickener mixtures of amps polymers with other thickeners

BSPR:

The mixtures of polymers of acrylamido-methylpropane sulfonic acid with the other thickeners such as the galactomannan gums or derivatives thereof, polyethylene oxide polymers and the cellulose alkyl ethers find utility in the areas where the polymers are used individually. Thus, the mixture with hydroxypropyl guar will find particular utility in earth formation fracturing for oil well stimulation because of this particular rheology. Examples of other applications include thickening textile print pastes and suspending pigments in paints as well as gelling alcohol-based cosmetic formulations.

BSPR:

The acrylamido-methylpropane sulfonic acid polymers employed in the present invention are prepared from an acrylamido-methylpropane sulfonic acid, such as, 2-acrylamido-2-methylpropane sulfonic acid, which is commercially available and sold under the trademark "AMPS" by the Lubrizol Corporation.

BSPR:

As indicated earlier, the other thickener polymers used in admixture with the acrylamido-methylpropane sulfonic acid polymers to provide a synergistic effect are the galactomannan gums, polyalkylene oxide polymers and cellulose alkyl ethers. The galactomannan gums includes the class of polysaccharides containing both galactose and mannose units. The polygalactomannans are usually found in the endosperm section of leguminous seeds such as guar, locust bean, honey locust and flametree. Derivatives of these gums such as the hydroxy alkyl ethers are particularly useful in admixture with the acrylamidomethylpropane sulfonic acid polymers.

BSPR:

As indicated earlier, other polymers which are employed in admixture with the acrylamido-methylpropane sulfonic acid polymers are the water soluble cellulose ethers and the polyalkylene oxide polymers. These polymers are well known and can be produced in accordance with known procedures. The cellulose ethers which may be used among others are the hydroxyl containing cellulose ethers such as hydroxyalkyl cellulose corresponding to the hydroxy alkyl ethers of galactomannans above such as hydroxyethyl and hydroxypropyl cellulose and the alkylhydroxyalkyl celluloses such as methylhydroxypropyl cellulose. The most common polyalkylene oxide polymers which are available commercially are the poly(ethylene oxide) polyether polymers.

DEPR:

The other polymer employed in admixture with the acrylamido-methylpropane sulfonic acid polymer, designated (B) polymer in the Tables are identified in accord with the following code:

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L3: Entry 24 of 40

File: USPT

Nov 25, 1986

DOCUMENT-IDENTIFIER: US 4624795 A

TITLE: Aqueous acid gels and use thereof

DEPR:

In a 1 liter reaction vessel there was added 288 grams of distilled water, 132 grams of acrylamido methylpropane sulfonic acid, and 4.8 grams of vinyl phosphonic acid. The pH was adjusted with 277 grams of 10 weight percent sodium hydroxide to 8.5. Then 96 grams of acrylamide and 7.2 grams of vinylformamide were added to the vessel. The solution was degassed with N.sub.2 for 30-45 minutes. The reaction was then initiated with 2 ml of aqueous 1 weight percent ammonium peroxydisulfate. After a short induction period the reaction began. As the reaction proceeded the temperature increased to 65.degree. C. The reaction was left undisturbed for 12 hours, yielding 30% by weight active copolymer. The water was evacuated from the gel yielding a dry, crystalline polymer that was easily ground into a fine white powder.

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L3: Entry 38 of 40

File: DWPI

Aug 21, 1985

DERWENT-ACC-NO: 1985-204696

DERWENT-WEEK: 198534

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TITLE: Thickening of water or alcohol - using mixt. of poly-acrylamido-methane sulphonic acid and specified gums or other water-sol. polymers, showing synergism

INVENTOR: KARL, C L

PATENT-ASSIGNEE: HENKEL CORP (HENK)

PRIORITY-DATA: 1984US-0579242 (February 13, 1984)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE | PAGES | MAIN-IPC |
|---------------|--------------------|----------|-------|----------|
| EP 152095 A | August 21, 1985 | E | 025 | N/A |
| CA 1261516 A | September 26, 1989 | N/A | 000 | N/A |
| DE 3564441 G | September 22, 1988 | N/A | 000 | N/A |
| EP 152095 B | August 17, 1988 | E | 000 | N/A |
| JP 60192753 A | October 1, 1985 | N/A | 000 | N/A |
| US 4540510 A | September 10, 1985 | N/A | 000 | N/A |

DESIGNATED-STATES: AT BE CH DE FR GB IT LI NL AT BE CH DE FR GB IT LI NL

CITED-DOCUMENTS:FR 2130542

APPLICATION-DATA:

| PUB-NO | APPL-DATE | APPL-NO | DESCRIPTOR |
|-------------|-------------------|----------------|------------|
| EP 152095A | February 12, 1985 | 1985EP-0101485 | N/A |
| JP60192753A | February 13, 1985 | 1985JP-0027512 | N/A |
| US 4540510A | February 13, 1984 | 1984US-0579242 | N/A |

INT-CL (IPC): C08B 37/00; C08F 128/02; C08L 1/28; C08L 5/14; C08L 33/26; C08L 71/02; C09K 7/00; G05D 24/00

ABSTRACTED-PUB-NO: EP 152095A

BASIC-ABSTRACT:

Compsn. comprises: (i) a polymer of an acrylamido methylpropane sulphonic acid; and (ii) a water-sol. polymer selected from galactomannan gums, hydroxyalkyl ethers thereof, hydroxyalkyl cellulose ethers, polyalkylene oxides and their mixts., the alkyl and alkylene gps. contg. 2-8C atoms.

USE/ADVANTAGE - The compsns. are useful in the same fields as their individual components are, e.g. formation fracturing for oil well stimulation (where (ii) is hydroxypropyl guar), thickening textile print pastes, suspending pigments in paints, and gelling alcohol-based cosmetic formulations. The components of the compsn. have a synergistic thickening effect in water and alcohol solvents: e.g. the actual viscosity is 1-30 times that predicted from the viscosities of separate solns. of (i) and (ii).

ABSTRACTED-PUB-NO: EP 152095B

EQUIVALENT-ABSTRACTS:

A composition comprising a mixture of a polymer of an acrylamido methylpropanesulfonic acid and a water soluble polymer selected from galactomannan gums, hydroxyalkyl ethers of galactomannan gums, hydroxyalkyl cellulose ethers, polyalkylene oxide polymers and mixtures thereof, wherein the alkyl and alkylene groups contain from 2 to 8 carbon atoms. (16pp)

US 4540510A

Compsn. comprises a mixt. of (A) acrylamido methylpropane sulphonie acid polymer of mol. wt. above 1000000 and (B) water soluble polymer. (B) is galactomannan gum, hydroxyalkyl ether of galactomannan gum, hydroxyalkyl cellulose ether or polyalkylene oxide polymer. The alkyl and alkylene gps. have 2-8C.

USE/ADVANTAGE - The polymers exhibit a synergistic thickening effect. The compsn. can be used for earth formation fracturing for oil well stimulation and in textile print pastes, paints, cosmetic formulations, etc. (7pp)

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: A97 D21 H01

CPI-CODES: A03-A04A; A03-C02; A04-A; A04-D04; A05-H01; A07-A01; A07-A04F; D08-B; D10-A01; H01-C03;

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Collections

Definition, Editing, Browsing

Name: Undefined

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4845138
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4540510

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L3: Entry 37 of 40

File: DWPI

Sep 19, 1990

DERWENT-ACC-NO: 1990-284304

DERWENT-WEEK: 199038

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TITLE: Treatment of red mud filter cake waste from Bayer process - by addn. of water-swellable, water-insol. polymers to improve rigidification after pumping

ABTX:

The dispersed particles to be pumped are pref. of very small size e.g. all less than 100 microns, pref. with at least 90% below 20 microns, esp. a filter cake of red mud from the Bayer process of recovering alumina from bauxite. In particular the process is effected on muds with solids content 30-80 (esp. 55-65) wt.%. The polymer is pref. made from a water-sol. monomer (or blend) with a di- or poly-ethylenically unsatd. crosslinker, esp. anionic polymers of (meth)acrylic acid, allyl sulphonic acid or 2-acrylamido-methylpropane sulphonic acid.

| FOREIGN-PAT-NO | PUBN-DATE | COUNTRY | US-CL |
|----------------|----------------|---------|--------|
| 613255 | January 1961 | CAX | 400/6 |
| 727178 | February 1966 | CAX | 117/45 |
| 873290 | June 1971 | CAX | |
| 2180590 | January 1997 | CAX | |
| 0 705 643A1 | April 1996 | EPX | |
| 0 755 964A2 | January 1997 | EPX | |
| 1200535 | September 1965 | DEX | |
| 56 95936 | December 1979 | JPX | |
| 94/22940 | October 1994 | WOX | |
| 97/19582 | June 1997 | WOX | |

OTHER PUBLICATIONS

Buchholz, "Keeping Dry with Superabsorbent Polymers", Chemtech, (Sep. 1994) pp. 38-43.

"The Merck Index, an Encyclopedia of Chemicals, Drugs, and Biologicals", edited by Budavari et al. (1989).

"NeoGen.TM.2000--Basic Formulating Tips" (Sep. 1996).

"NeoGen.TM.DGH" (Sep. 1996).

ART-UNIT: 174

PRIMARY-EXAMINER: Sanders; Kriellion

ATTY-AGENT-FIRM: Jenkins & Wilson, P.A.

ABSTRACT:

A particulate material composition of superabsorbent polymer particles, wherein less than about 60% by weight of the superabsorbent polymer particles will pass through a U.S. Standard 50 mesh sieve. The composition has anti-caking properties and also reduced dusting. The composition can be produced by mixing the superabsorbent polymer particles with an inorganic powder, such as clay.

67 Claims, 0 Drawing figures

Handwritten:
700 x 100
2000000

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L3: Entry 2 of 40

File: USPT

Sep 26, 2000

US-PAT-NO: 6124391

DOCUMENT-IDENTIFIER: US 6124391 A

TITLE: Superabsorbent polymers having anti-caking characteristics

DATE-ISSUED: September 26, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|------------|-------|----------|---------|
| Sun; Fang | Lisle | IL | N/A | N/A |
| Jones; Heather S. | Greensboro | NC | N/A | N/A |
| Kaiser; Thomas A. | Greensboro | NC | N/A | N/A |
| Hsu; Whei-Neen | Greensboro | NC | N/A | N/A |
| Molen; Ronald L. | Greensboro | NC | N/A | N/A |
| Deaton; Peter A. | Greensboro | NC | N/A | N/A |
| Messner; Bernfried A. | Greensboro | NC | N/A | N/A |

ASSIGNEE-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|---------------------------|------|-------|----------|---------|-----------|
| Stockhausen GmbH & Co. KG | N/A | N/A | N/A | DEX | 03 |

APPL-NO: 9/ 135844

DATE FILED: August 18, 1998

INT-CL: [7] C08K 3/34

US-CL-ISSUED: 524/447; 523/223

US-CL-CURRENT: 524/447; 523/223

FIELD-OF-SEARCH: 524/447, 523/223

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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|----------------------------------|----------------|----------------------|---------|
| <input type="checkbox"/> 3012900 | December 1961 | Kleinmann et al. | 117/4 |
| <input type="checkbox"/> 3723153 | March 1973 | Nagata et al. | 117/21 |
| <input type="checkbox"/> 4107382 | August 1978 | Augustine et al. | 428/368 |
| <input type="checkbox"/> 4286082 | August 1981 | Tsubakimoto et al. | 526/240 |
| <input type="checkbox"/> 4359492 | November 1982 | Schlademan | 427/222 |
| <input type="checkbox"/> 4381782 | May 1983 | Mazurak et al. | 604/368 |
| <input type="checkbox"/> 4448900 | May 1984 | Schwarz | 521/57 |
| <input type="checkbox"/> 4533562 | August 1985 | Ikegami et al. | 427/3 |
| <input type="checkbox"/> 4576835 | March 1986 | Gardenier et al. | 427/222 |
| <input type="checkbox"/> 4610678 | September 1986 | Weisman et al. | 604/368 |
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| <input type="checkbox"/> 4833179 | May 1989 | Young et al. | 522/183 |
| <input type="checkbox"/> 4880470 | November 1989 | Hyché et al. | 106/271 |
| <input type="checkbox"/> 4898616 | February 1990 | Hyché et al. | 106/271 |
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| <input type="checkbox"/> 4960644 | October 1990 | Hyché et al. | 428/407 |
| <input type="checkbox"/> 4975120 | December 1990 | Hyché et al. | 106/271 |
| <input type="checkbox"/> 5006565 | April 1991 | Tusim et al. | 521/57 |
| <input type="checkbox"/> 5007961 | April 1991 | Hyché et al. | 106/18 |
| <input type="checkbox"/> 5096493 | March 1992 | Hyché et al. | 106/271 |
| <input type="checkbox"/> 5190579 | March 1993 | Gose et al. | 106/18 |
| <input type="checkbox"/> 5200270 | April 1993 | Ishida et al. | 428/403 |
| <input type="checkbox"/> 5236649 | August 1993 | Hall et al. | 264/130 |
| <input type="checkbox"/> 5322731 | June 1994 | Callahan, Jr. et al. | 428/327 |
| <input type="checkbox"/> 5334644 | August 1994 | Gose et al. | 524/487 |
| <input type="checkbox"/> 5409771 | April 1995 | Dahmen et al. | 428/327 |
| <input type="checkbox"/> 5413747 | May 1995 | Akers et al. | N/A |
| <input type="checkbox"/> 5419956 | May 1995 | Roe | 428/283 |
| <input type="checkbox"/> 5443910 | August 1995 | Gose et al. | 428/407 |
| <input type="checkbox"/> 5455288 | October 1995 | Needham | 523/205 |
| <input type="checkbox"/> 5466731 | November 1995 | Akers et al. | N/A |
| <input type="checkbox"/> 5536576 | July 1996 | Hishida | 428/403 |
| <input type="checkbox"/> 5688449 | November 1997 | Fox | 264/54 |
| <input type="checkbox"/> 5728742 | March 1998 | Staples et al. | 521/57 |

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